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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/586,963 06/05/00 TANAKA

K JAO 39894.01

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MM91/0503

EXAMINER

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PO BOX 19928
ALEXANDRIA VA 22320

NGUVEN, P

ART UNIT

PAPER NUMBER

2811
DATE MAILED:

05/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.

09/586,963

Applicant(s)

TANAKA

Examiner

CUONG Q NGUYEN

Group Art Unit

2811

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 2-8, 12-14, 21 is/are pending in the application.
- Of the above claim(s) 4-5, 7-11, 13-14, 21 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 2-3, 6, 12 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2 ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other _____

Office Action Summary

Art Unit: 2811

DETAILED ACTION

Election/Restriction

1. Applicant's election of Embodiment 1, claims 2, 3, 6 and 12 in Paper No.6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Oath/Declaration

2. The oath/declaration filed on 06/05/00 is acceptable.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 08/914,095, filed on 08/19/1997.

Information Disclosure Statement

4. The Information Disclosure Statement filed on 06/05/00 has been considered.

Claim Rejections - 35 U.S.C. § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

Art Unit: 2811

Claims 2-3, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Chittipeddi et al. (US 5,751,065).

Chittipeddi et al. discloses an internal circuit device comprising: a first conductor layer (219) connected to a conductive member (a bonding wire 223) for external connection; a second conductive layer (215) with a planar network pattern having a plurality of openings (307) formed below the first conductive layer; a third conductive layer (211) with a planar network pattern formed below the second conductive layer, on an insulating film (207, 205) which formed on a semiconductor substrate (201); a first insulating interlayer (217) formed between the first and second conductive layers; a first through hole (401) formed in the first insulating interlayer; a fourth conductive layer filling the first through hole; a second insulating interlayer (213) formed between the second and the third conductive layer; a second through hole (402) formed in the second insulating interlayer such that the first and second through holes are axially offset; a fifth conductive layer filling the second through hole wherein the fourth and fifth conductive layer do not overlap. See Fig.3 and Fig.5.

Note that, the first insulating interlayer (217) which is formed on the second conductive layer (215) inherently fills the holes (307) perpendicularly to form the contiguous section between the first and second conductive layers. Therefore, Chittipeddi et al.'s device inherently has contiguous section of first and second

Art Unit: 2811

insulating interlayers formed between the first and second conductive layers through the holes (307).

Claim Rejections - 35 U.S.C. § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace (US 5,866,441) in view of Fujiki et al. (US 5,736,791)

Pace discloses a multiple wiring structure comprising: a first conductive layer (519) connected to a conductive member (541 or 341, a bonding pad layer. See Pace's col.10 lines 5-10); a second conductive layer (518) with a planar network pattern formed below the first conductive layer; a third conductive layer (513) with a planar network pattern formed below the second conductive layer; a first insulating interlayer formed between the first and second conductive layers; a first through hole formed in the first insulating interlayer; a fourth conductive layer filling the first through hole; a second insulating interlayer formed between the second and the third conductive layer; a second through hole (517) formed in the second insulating interlayer such that the

Art Unit: 2811

first and second through holes are axially aligned; a fifth conductive layer filling the second through hole. See Pace's Fig.5h.

Pace does not teach that the second conductive layer has a plurality of openings.

Fujiki et al discloses a multiple wiring structure comprising: a first conductive layer (6) connected to a bonding pad (10) for external connection; a second conductive layer (3) formed under conductive layer (6) having a plurality of openings (13); a first insulating interlayer formed between the first and second conductive layers, wherein the first insulating interlayer fills the openings (13) to connect a second insulating interlayer (2) formed below the second conductive layer. See Fujiki et al's Fig.1 and Fig.3.

It would have been obvious to one of ordinary skill in the art to form the second conductive layer including the openings as taught by Fujiki et al in order to provide stress relief for the conductive layer. See Fujiki et al. col.9, lines 14-31.

Conclusion

7. Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722

Art Unit: 2811

and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

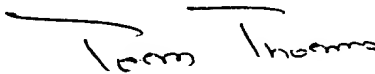
8. Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to CUONG Q NGUYEN whose telephone number is (703) 308-1293. The Examiner is in the Office generally between the hours of 6:30 AM to 5:00 PM (Eastern Standard Time) Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor TOM THOMAS who can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 308-7724.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center Receptionists whose telephone number is 308-0956.

CN

April 26, 2001


TOM THOMAS
SUPERVISORY PATENT EXAMINER